

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An acoustic model creating method of creating an HMM (Hidden Markov Model) by optimizing, for each state, Gaussian distribution numbers of the respective states constituting the HMM and retraining the optimized HMM using training speech data, the method comprising:

setting plural types of the Gaussian distribution numbers from a predetermined value to a maximum distribution number for each of the plurality of states constituting the HMM;

obtaining a set of respective training speech data χ^N by matching in time series a plurality of the training speech data with respective states of an HMM having any one of the Gaussian distribution numbers from the predetermined value to the maximum distribution number;

computing a description length for each of the plurality of states having the plural types of Gaussian distribution numbers using a Minimum Description Length criterion applied to the data χ^N ;

selecting a state having the Gaussian distribution number whose description length is minimum, for every state;

constructing the HMM in accordance with the state having the Gaussian distribution number whose description length is minimum, selected for every state, and retraining the constructed HMM using the training speech ~~data~~data; and

performing speech recognition using the retrained HMM.

2. (Canceled)

3. (Currently Amended) An acoustic model creating method according to ~~Claim 2,~~Claim 1, in the general equation that computes the description length, the second term on the right side of the equation being multiplied by a weighting coefficient α .

4. (Currently Amended) An acoustic model creating method according to ~~Claim 2,~~Claim 1, in the general equation that computes the description length, the second term on the right side of the equation being multiplied by the weighting coefficient α , and the third term on the right side being omitted.

5. (Canceled)

6. (Currently Amended) An acoustic model creating method according to ~~Claim 5,~~Claim 1, the any one of the Gaussian distribution numbers being the maximum distribution number.

7. (Original) An acoustic model creating method according to Claim 1, the HMMs being syllable HMMs.

8. (Original) An acoustic model creating method according to Claim 7, wherein, for a plurality of syllable HMMs having a same consonant or a same vowel in the syllable HMMs, the syllable HMMs having the same consonant out of the states constituting the syllable HMMs tie an initial state or at least two states including an initial state in the syllable HMMs, and the syllable HMMs having the same vowel tie a final state of the states having self loops or at least two states including the final state in the syllable HMMs.

9. (Original) A speech recognition device that recognizes input speech using HMMs (Hidden Markov Models) as acoustic models for feature data obtained by feature analysis of the input speech, the HMMs created by the acoustic model creating method according to Claim 1 being used as the HMMs which are the acoustic models.